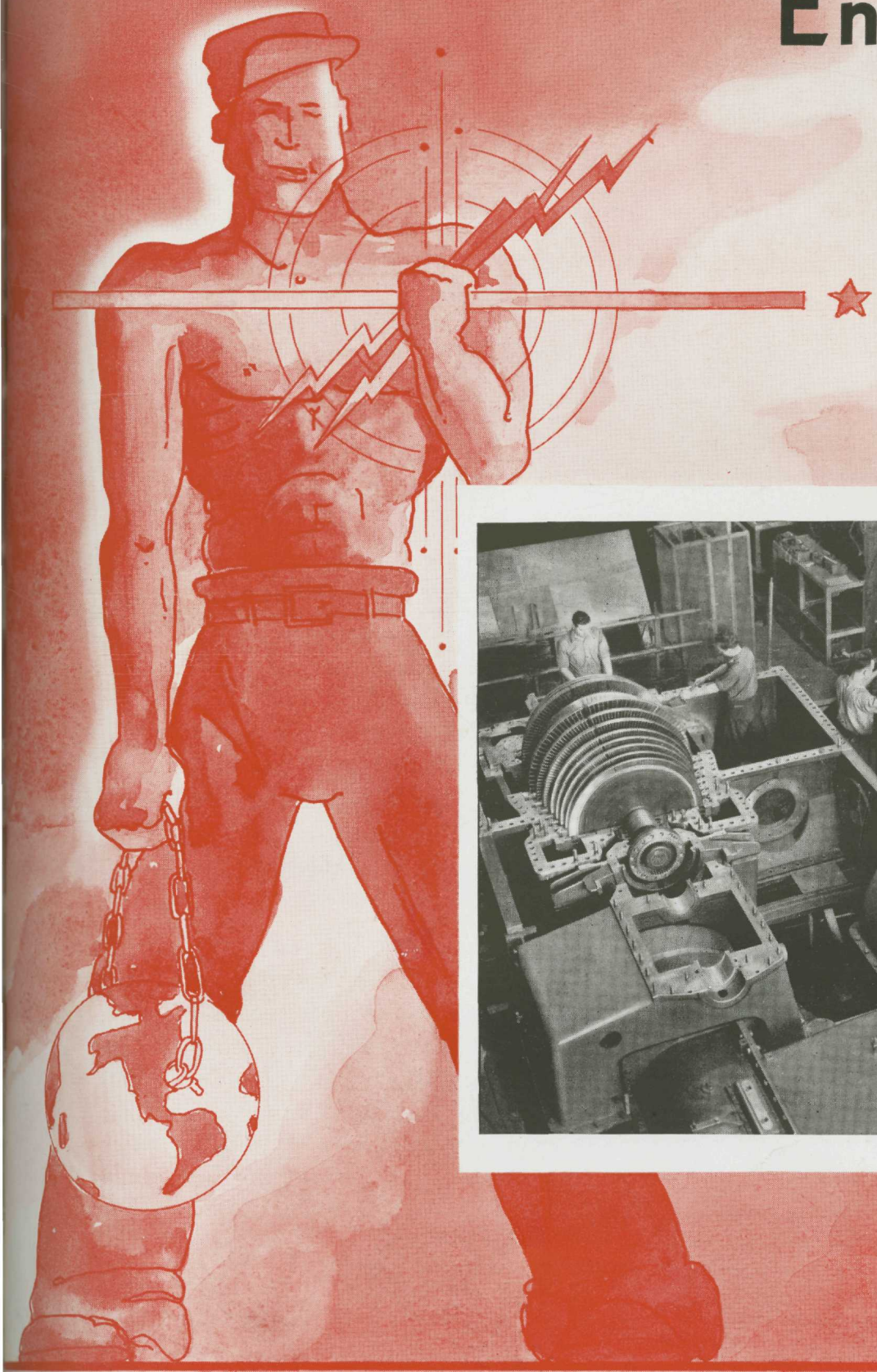
The Ohio State Engineer



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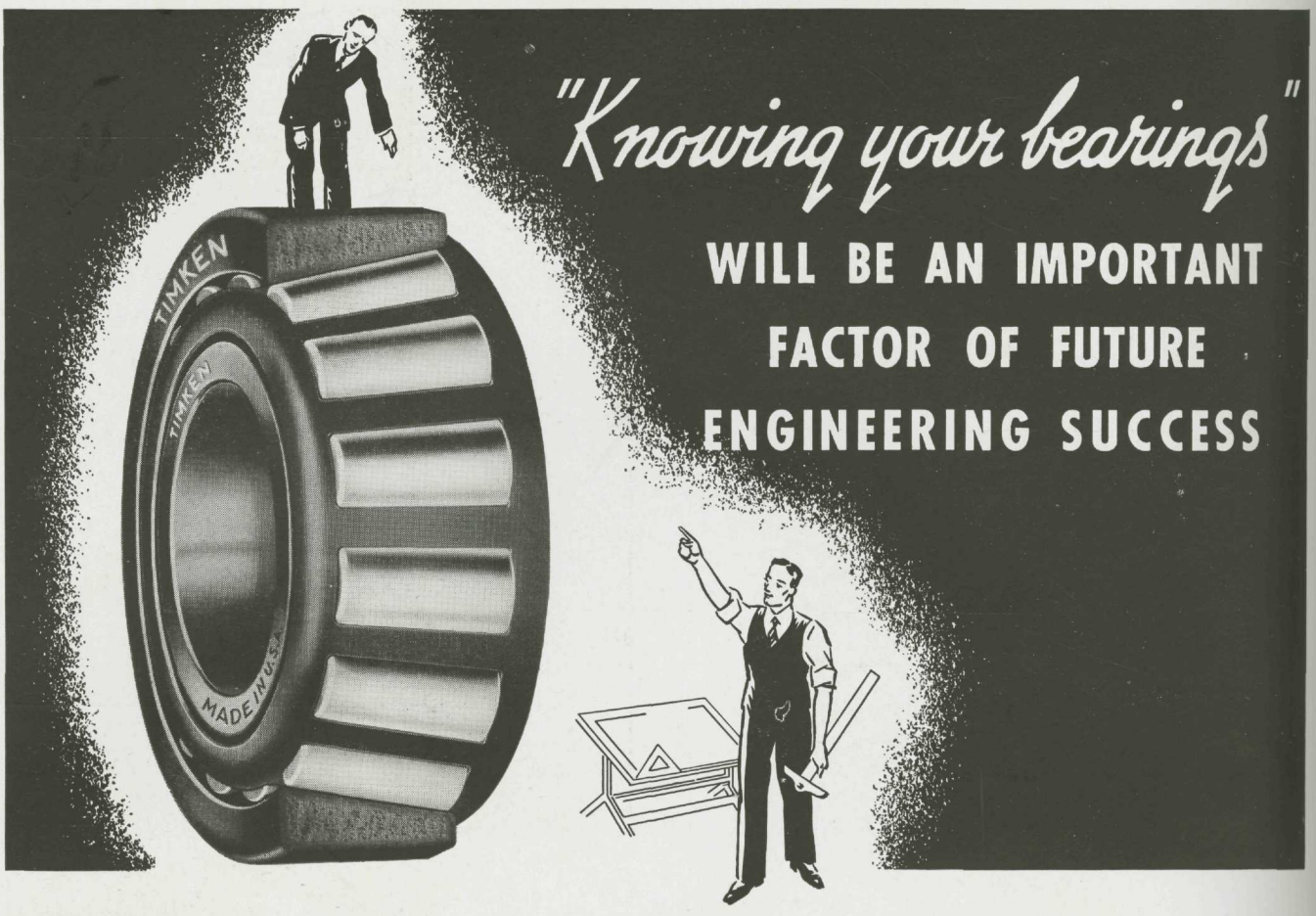

The terrific strain of modern war is testing American mechanical equipment of all kinds as it never has been tested before, but it is coming through with flying colors.

For, among other vitally important things, the designers of this equipment *know their bearings;* that is why so many Timken Tapered Roller Bearings are used in tanks, trucks, armored cars, guns, airplanes, warships and the machines that make them. Timken Bearings meet every bearing requirement because, in addition to eliminating friction they carry radial, thrust and combined loads and hold moving parts in correct and constant alignment.

Timken Roller Bearings have been solving bearing problems in industrial and transportation equipment for many years—long before the first world war. They will be called upon more and more during the reconstruction period that will follow Victory for the United Nations in the present conflict.

That is why you should begin now to acquire a thorough knowledge of Timken Tapered Roller Bearings — their design and application. When you have this knowledge you will be able successfully to meet any bearing condition you ever may encounter. Our engineers will help you to get it. The Timken Roller Bearing Company, Canton, Ohio.

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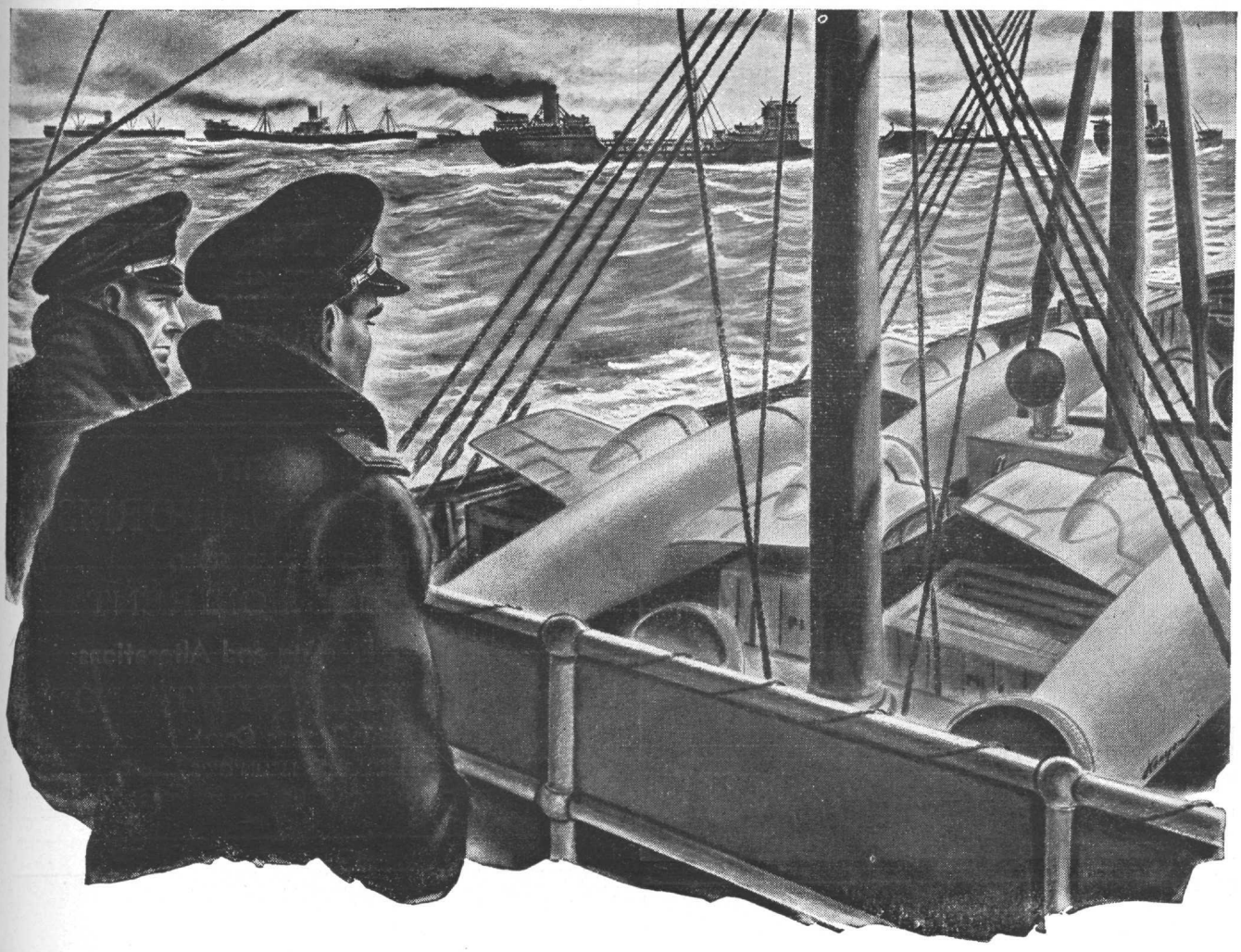
TAPERED ROLLER BEARINGS

Manufacturers of Timken Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; Timken Alloy Steels and Carbon and Alloy Seamless Tubing; and Timken Rock Bits.



This is the way to win a battle in the desert

Libya and North Africa made it clearer than ever: THIS IS A WAR OF SUPPLY.

In 1918, an American soldier could be equipped and maintained on 5 tons of supplies each year.

But today, for every soldier sent abroad, *10½ tons* of shipping space must be provided for *equipment alone.* And it takes an additional *18 tons of shipping to supply a single soldier for a year!*

Supply is a matter of *ships.*

And ships need electricity.

Vast quantities of electric power, for a thousand vital tasks that must be done to take a convoy safely across the seas...

Electricity to steer the vessels and operate the radios and signal lights.

Electricity to detect the approach of enemy subs and planes, to sound the alarm, to organize the defense.

Electricity to power great cargo winches, and delicate navigating instruments.

Electricity to make magnetic mines harmless, to provide invisible "black light" for reading charts at night. Electricity to keep food fresh, to cook it, to ventilate the ships, to provide comfort for the crews.

Electricity in every freighter, every tanker, every Navy escort vessel—to help win the war of supply!

We of Westinghouse take tremendous pride in building so much of the electrical equipment, so many of the great turbines and gears and electric drives, for the ships of America's Navy and Merchant Marine.

Into every piece of that equipment go all our "know-how," all our skill, all our determination to *do our share* in this war—and if possible, a little more.

Westinghouse Electric & Manufacturing Company, Pittsburgh, Pennsylvania.

Tune in the Westinghouse Program starring John Charles Thomas — NBC Network, Sunday, 2:30 P. M., Eastern War Time.

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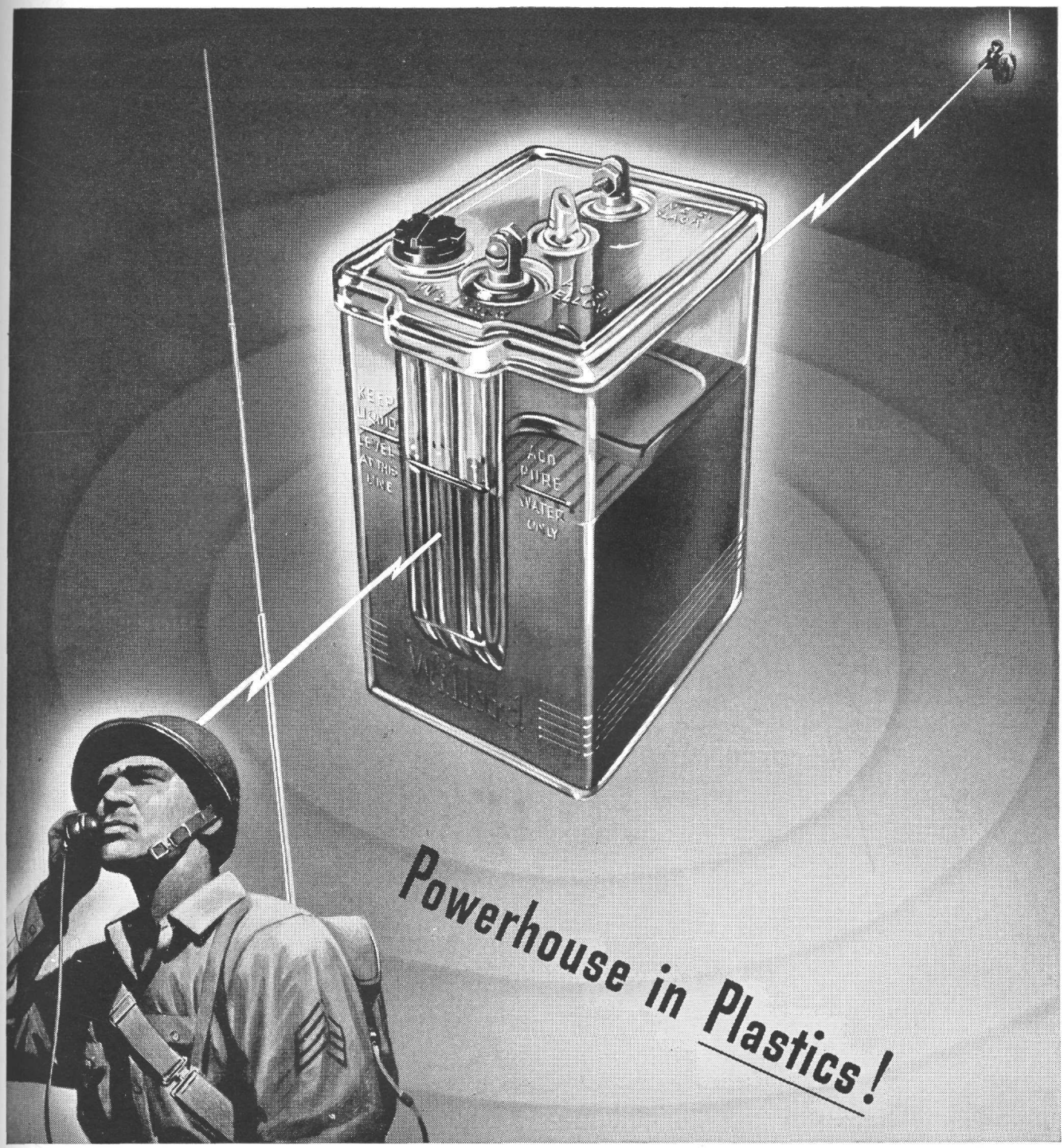
PLANTS IN 25 CITIES — OFFICES EVERYWHERE



The battery, a functional part of certain types of communication systems, might well be called a miniature powerhouse. It supplies the vital electric current. Recently battery builders have found in plastics an admirable material for many component parts as well as the battery case itself. STYRON (Dow Polystyrene) is now being used for these purposes because it provides all the essentials and, in addition, offers definite advantages over the materials that it supplants.

Exceptional electrical properties which make STYRON a remarkably effective insulating medium—extraordinary resistance to chemicals—high impact strength—light weight—these are some of the distinctive characteristics of this crystal-clear molding material that are of great assistance to battery makers. Thus in the field of electricity, as in many others, plastics are making a genuine contribution.

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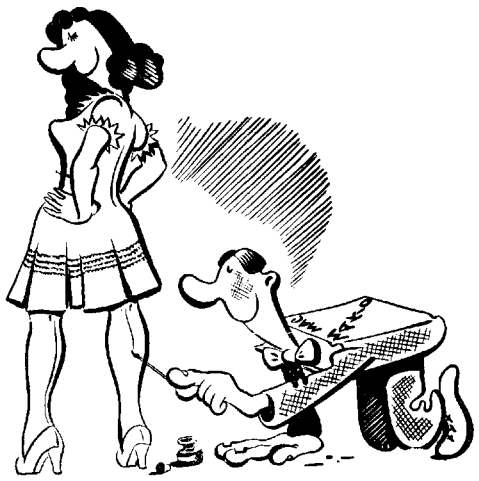


Choose Your Favorite---

In the Sixty Second Makio's Queen Contest

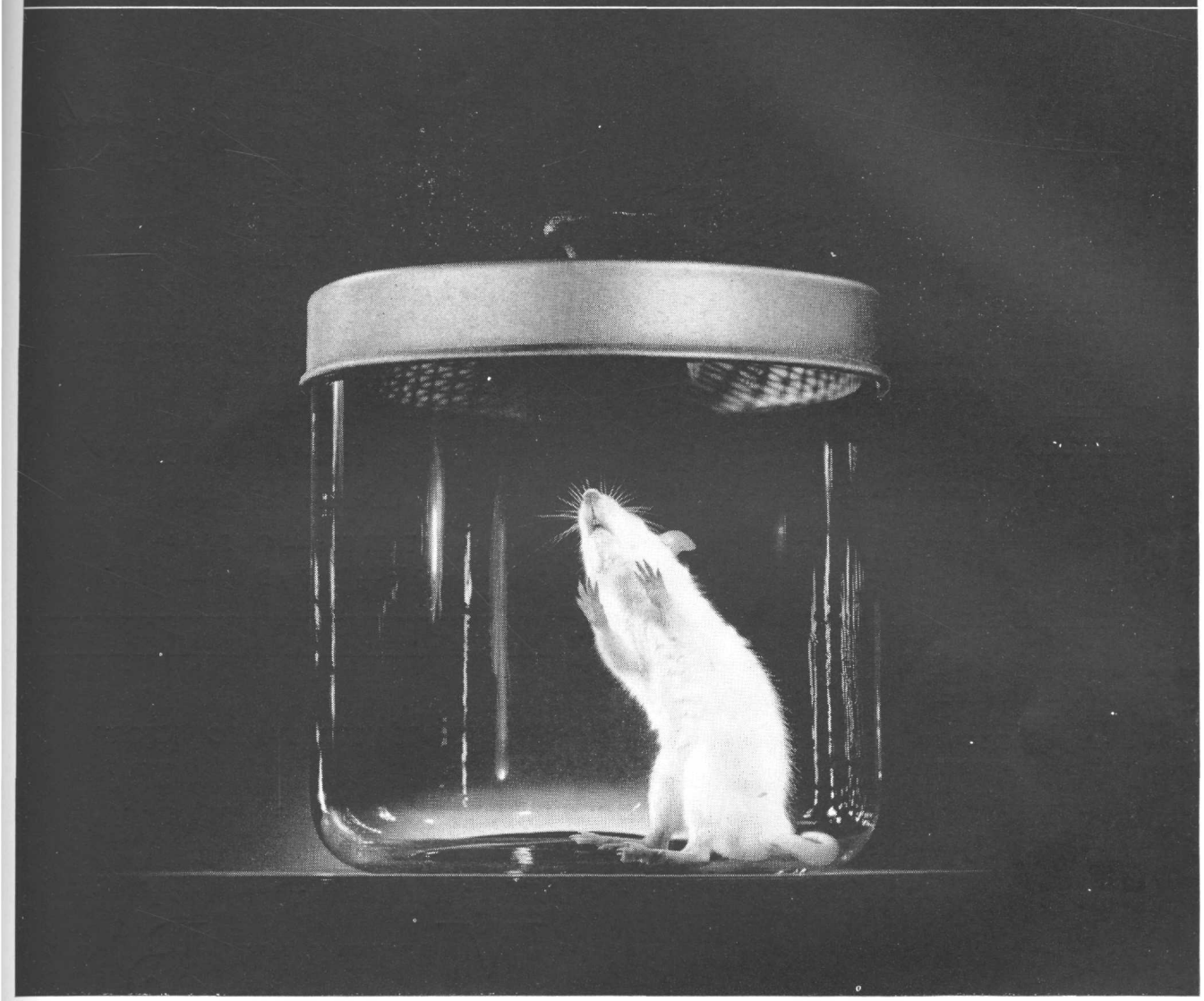
Jo Becher
Ginny Beuttel
Sue Dietrich
Millie Goldenberg
Eleanor Goldman
Dottie Green
Rheda Janson
Jeanne Kelly
Lois McDonald
Bobbe Milburn
Jo Pertl
Fran Wagenhals
Wilma Yount

Ballots to Be Sent to Subscribers Soon

WINNER TO BE ANNOUNCED AT MILITARY BALL, FEBRUARY 19.

YOUR 1943 makio

The rat that went to college...



CHARLEY, the large and healthy white rat shown above, not only goes to college but he lives in a glass house!

For Charley is one of the thousands of white rats used for scientific research in American college laboratories. His glass house is a Pyrex animal jar, for a couple of good reasons: One, because of its exceptional mechanical strength. Two, because Pyrex glass can be sterilized in live steam without breaking or becoming cloudy, which makes it a favorite with laboratory men.

Pyrex laboratory ware, developed during the last war to replace imported glass, is just one of Corning's many research contributions to better living. Others are everywhere. The glass tubes in your radio. Beacons that guide American planes. Glass pumps and piping in busy chemical and food plants. Signal lights and insulators on our warships.

Corning knows glass. Knows how to make it resistant to chemicals and heat, strong and hard to withstand impact and abrasion, accurate to tolerances ranging as low as 0.00002 of an inch.

This knowledge is being put to good use today. A special sanitary glass piping, for example, has just been developed to ease the dairy industry's shortage of metal. The communications industry, faced with a sudden wartime demand for insulators in intricate shapes and with special electrical characteristics, is using glass insulators quickly developed by Corning.

Design engineers who are licking this war's problems are finding ever new uses for glass. For tomorrow's engineers also, glass is the material with unlimited possibilities. Industrial Division, Corning Glass Works, Corning, New York.

CORNING
means
Research in Glass

The OHIO STATE ENGINEER

Vol. XXVI | February, 1943 | No. 3

OUR COVER

Workmen assembling Merchant Marine turbine-gear propulsion sets.
—Courtesy General Electric

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